

# NASA TECH BRIEF



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## Protective Clothing for Workers with 5-kw and 20-kw Short-Arc Lamps



Fig. 1. Suit for Assemblers and Servicemen

### The problem:

Frequent explosions of short-arc lamps during handling or while operating, especially under extreme cold, with resultant injury of personnel by flying fragments of quartz or glass. These lamps are growing in popularity; they are used by the services (for illumination of battlefields), by the police, and as helicopter-borne searchlights, and invasion of the motion-picture, television, and printing industries is expected. The arc



Fig. 2. Suit for Focusers and Adjusters

is mounted within an envelope of quartz or glass, pressurized with an inert gas—commonly xenon—at 4 to 5 atm. During operation the pressure may exceed 10 atm.

### Safety measures:

An extensive series of test explosions of pressurized quartz or pyrex envelopes has not produced a solution of the problem, but has led to development of two

(continued overleaf)

suits of protective clothing to be worn by personnel working near lamps: one to be worn during assembly or servicing of inoperative 5- and 20-kw lamps (Fig. 1); the other, during adjustment or focusing of operating 5-kw lamps (Fig. 2).

The former suit comprises a riot helmet and modified face shield, with two-layer leather capes and a stainless-steel screen; leather jacket, pants, and toe-caps; apron and half-jacket, a pair of lightweight leather gloves; and a pair of heavy leather gloves. The latter suit consists of a heavy leather skullcap, with leather capes in front and rear; leather jacket; goggles; a pair of rubber gloves; and a pair of cloth gloves.

**Note:**

Documentation is available from:

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**Patent status:**

No patent is contemplated.

Source: M. J. Argoud  
(NPO-11155)